

What is Claimed Is:

1. A circuit comprising:
 - a. an input,
 - b. an output and
 - c. a chopper stabilized, multistage, feedforward amplifier connected
- 5 between said input and said output.

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2. The circuit of claim 1, further comprising an analog to digital converter connected between said amplifier and said output.

3. The circuit of claim 2 in which said analog to digital converter is a delta sigma modulator.

4. The circuit of claim 2, further comprising a rough buffer connected between said input and said amplifier.

5. The circuit of claim 4 in which said rough buffer comprises an amplifier configured to charge rapidly during one time interval and to charge more slowly but more accurately during a second time interval. 0

6. The circuit of claim 4, further comprising a plurality of inputs and a multiplexer, connected to said inputs, for selectively applying at least one of said inputs to said rough buffer. 0

7. The circuit of claim 6 further comprising a filter connected between the analog to digital converter and said output and a serial port for receiving control information from external to said circuit for use in controlling said circuit.

8. The circuit of claim 7 in which said filter comprises a sinc^5 filter and a sinc^3 filter.

9. The circuit of claim 8 further comprising a selection mechanism to selectively route the output of the sinc^5 filter to either the output or to the sinc^3 filter.

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10. The circuit of claim 2 in which said analog to digital converter is configured to accept rail to rail input and in which a bypass path, including a buffer for low input current, is selectively enabled to connect said input directly to said analog to digital converter, bypassing said amplifier.) 0

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11. The circuit of claim 1, further comprising a plurality of integrators connected between said amplifier and said output.

12. The circuit of claim 1 fabricated on an integrated circuit.

13. An instrumentation amplifier comprising:

- a. an input,
- b. a first integration stage connected to said input and providing an output to a first adder;
- c. a second integration stage connected to an output of said first adder and providing an output to a second adder, and
- d. an output integration stage receiving the output of said second adder and providing an output

14. The instrumentation amplifier of claim 13 having a direct connection from said input to an input of said first adder.

15. The instrumentation amplifier of claim 13 having a direct connection from said input to an input of said second adder.

16. The instrumentation amplifier of claim 13 having a third integration stage having an input connected to the output of said first integration stage and an output connected to said first adder.

17. The instrumentation amplifier of claim 13 having a fourth integration stage having an input connected to the output of said second integration stage and an output connected to said second adder.

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18. A method of designing an integrated circuit containing an amplifier comprising the steps of:

- a. providing an input,
- b. providing a first integration stage connected to said input and providing an output to a first adder;
- c. providing a second integration stage connected to an output of said first adder and providing an output to a second adder, and
- d. providing an output integration stage receiving the output of said second adder and providing an output.

19. The method of designing an integrated circuit of claim 18 comprising the further step of providing a direct connection from said input to an input of said first adder.

20. The method of designing an integrated circuit of claim 18 comprising the further step of providing a direct connection from said input to an input of said second adder.

21. The method of designing an integrated circuit of claim 18 comprising the further step of providing a third integration stage having an input connected to the output of said first integration stage and an output connected to said first adder.

22. The method of designing an integrated circuit of claim 18 comprising the further step of providing a fourth integration stage having an input connected to the output of said second integration stage and an output connected to said second adder.

23. A method of fabricating an integrated circuit containing an amplifier comprising the steps of:

- a. providing an input,

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- b. providing a first integration stage connected to said input and providing an output to a first adder;
- c. providing a second integration stage connected to an output of said first adder and providing an output to a second adder, and
- d. providing an output integration stage receiving the output of said second adder and providing an output.

24. The method of fabricating an integrated circuit of claim 23 comprising the further step of providing a direct connection from said input to an input of said first adder.

25. The method of fabricating an integrated circuit of claim 23 comprising the further step of providing a direct connection from said input to an input of said second adder.

26. The method of fabricating an integrated circuit of claim 23 comprising the further step of providing a third integration stage having an input connected to the output of said first integration stage and an output connected to said first adder.

27. The method of fabricating an integrated circuit of claim 23 comprising the further step of providing a fourth integration stage having an input connected to the output of said second integration stage and an output connected to said second adder.

28. A method of designing an integrated circuit comprising the steps of specifying an input, an output, and a chopper stabilized, multistage, feedforward amplifier connected between said input and said output.

29. The method of claim 28 further comprising the step of specifying a delta sigma modulator to be connected between said amplifier and said output.

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30. A method of fabricating an integrated circuit comprising the steps of providing an input, an output, and a chopper stabilized, multistage, feedforward amplifier connected between said input and said output.

31. The method of claim 30 further comprising the step of providing a delta sigma modulator to be connected between said amplifier and said output.

Part A4

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